

AMENDMENTS TO THE CLAIMS

1. (Amended) A method for the removal of cholesterol, triglycerides and other lipids from animal plasma, serum, or other suitable blood fraction containing apolipoproteins, as a discontinuous flow system, said method comprising connecting a subject to a device for withdrawing blood, withdrawing blood containing blood cells from the subject, separating said fraction from the blood cells and mixing with a solvent mixture which extracts said lipids from the fraction but which does not extract said apolipoproteins from the fraction, after which the delipidated fraction is recombined with the blood cells and returned to the subject, such that the solvent extraction step is carried out separately and remote from the subject while the subject is not still connected to the device for withdrawing blood [frown] from the subject, wherein the extraction solvent is removed from the delipidated fraction by mixing the delipidated fraction with an absorbent specific for the extraction solvent and wherein the absorbent does not remove said apolipoproteins from the [delipidated] delipidated fraction being returned to the subject.
2. A method as defined in claim 1, wherein the extraction solvent is substantially removed from the delipidated fraction by washing with a second solvent.
3. A method as defined in claim 2, wherein the delipidated fraction is washed four times.

4. A method as defined in claim 2, wherein the second solvent is diethyl ether.
5. A method as defined in claim 1, wherein the absorbent is contained in the pores of sintered spheres.
6. A method as defined in claim 5, wherein the sintered spheres are about 2 mm to 5 mm in diameter and the pores of the spheres are less than 50 .ANG. in diameter.
7. A method as defined in claim 1, wherein the absorbent is a macroporous polymeric bead for absorbing organic molecules from an aqueous solution.
8. A method as defined in any one of claim 1, wherein the absorbent is held in a chamber which is adapted to allow the delipidated fraction to pass through or over the absorbent at least twice.
9. A porous sintered sphere for use in a method as defined in claim 1, said sphere containing an absorbent in its pores.
10. A sintered sphere as defined in claim 9, wherein the absorbent is a macroporous polymeric bead for absorbing organic molecules from an aqueous solution.

11. A method of changing the blood rheology of an animal with impaired blood circulation whereby the plasma, serum or other suitable blood fraction of the animal has been treated by a method as defined in claim 1.

12. A method for rapid regression of coronary atherosclerosis in an animal whereby the plasma, serum or other suitable blood fraction from the animal is treated by a method as defined in claim 1.

13. A method of removing excessive adipose tissue from an animal whereby the plasma, serum or other suitable blood fraction from the animal is treated by a method as defined in claim 1.

14. A method of removing fat soluble toxins from an animal whereby the plasma, serum or other suitable blood fraction from the animal is treated by a method as defined in claim 1.

15. A method of changing the blood rheology of an animal whereby the plasma or serum of the animal is exchanged for non-autologous plasma or serum wherein said non-autologous plasma or serum has been treated by a method as defined in of claim 1.

16. A method of rapidly regressing coronary atherosclerosis in an animal whereby the plasma or serum of the animal is exchanged for non-autologous plasma or serum wherein said non-autologous plasma or serum has been treated by a method as defined in claim 1.

17. A method of removing excessive adipose tissue from an animal whereby the plasma or serum of the animal is exchanged for non-autologous plasma or serum wherein said non-autologous plasma or serum has been treated by a method as defined in claim 1.

18. A method of removing fat soluble toxins from an animal whereby the plasma or serum of the animal is exchanged for non-autologous plasma or serum wherein said non-autologous plasma or serum has been treated by a method as defined in claim 1.

19. A method for the removal of cholesterol, triglycerides and other lipids from animal plasma, serum, or other suitable blood fraction containing apolipoproteins, a discontinuous flow system, said method comprising connecting a subject to a device for withdrawing blood, withdrawing blood containing blood cells from the subject, separating said fraction from the blood cells and mixing with a solvent mixture which extracts said lipids from the fraction but which does not extract said apolipoproteins from the fraction, after which the delipidated fraction is recombined with the blood cells and returned to the subject such that the solvent extraction step is carried out separately and remote from the

subject while the subject is not still connected to the device for withdrawing blood from the subject, wherein the solvent extraction step comprises:

(a) mixing the solvent mixture containing the fraction with beads, said beads being of a density substantially mid-way between the density of the fraction and the density of the solvent mixture; and

(b) isolating the thus delipidated fraction-containing phase.

20. A method as defined in claim 19, wherein the beads contain entrapped air to obtain the density substantially midway between the density of the fraction and the density of the solvent mixture.

21. A method as defined in claim 20, wherein the density of the beads is about 0.9 g/ml.

22. A batch method for removing lipids from a volume of animal or human plasma, serum, or other suitable blood fraction containing apolipoproteins comprising: providing the volume of animal or human plasma, serum, or other suitable blood fraction; admixing the plasma, serum, or other suitable blood fraction with an extraction solvent which extracts the lipids from the plasma, serum, or other suitable blood fraction without extracting the apolipoproteins to form a delipidated fraction;

introducing an absorbent to the delipidated fraction to substantially remove the extraction solvent from the plasma, serum, or other suitable blood fraction; and separating the absorbent from the delipidated fraction to form a apolipoprotein containing delipidated fraction.

23. A batch method as claimed in claim 22, wherein the extraction solvent is substantially removed from the delipidated fraction by washing at least once with a second solvent.

24. A batch method as claimed in claim 22, wherein the extraction solvent is substantially removed from the delipidated fraction by washing a plurality of times with a second solvent.

25. A batch method as claimed in claim 23, wherein the second solvent is diethyl ether.

26. A batch method as claimed in claim 22, wherein the absorbent is disposed in the pores of sintered spheres.

27. A batch method as claimed in claim 26, wherein the pores of the sintered spheres are less than 50 Å in diameter.

28. A batch method as claimed in claim 22, wherein the absorbent is a macroporous polymeric bead for absorbing organic molecules from an aqueous solution.

29. A batch method as claimed in claim 22, wherein the absorbent is held in a chamber which is adapted to allow the delipidated fraction to pass through or over the absorbent at least twice.

30. A batch method as claimed in claim 22, further comprising:
mixing the apolipoprotein containing delipidated fraction with blood cells derived
from an animal or a human to form a treated blood.

31. A batch method as claimed in claim 30, further comprising:
introducing the treated blood into the blood stream of an animal or a human, wherein
the apolipoprotein containing delipidated fraction and the blood cells are respectively
autologous or non-autologous to the animal or human.

32. A batch method as claimed in claim 22, further comprising:
introducing the apolipoprotein containing delipidated fraction into the blood stream of
an animal or a human, wherein the apolipoprotein containing delipidated fraction is
autologous or non-autologous to the animal or human.

33. A method of changing the blood rheology of an animal or a human with
impaired blood circulation whereby the plasma, serum, or other suitable blood fraction of the
animal or the human has been treated by a method as claimed in claim 31.

34. A method for rapid regression of coronary atherosclerosis in an animal or a
human whereby the plasma, serum, or other suitable blood fraction from the animal or
human is treated by a method as claimed in claim 31.

35. A method of removing excessive adipose tissue from an animal or a human
whereby the plasma, serum or other suitable blood fraction from the animal or human is
treated by a method as claimed in claim 31.

36. A method of removing fat soluble toxins from an animal or a human whereby the plasma, serum or other suitable blood fraction from the animal or human is treated by a method as claimed in claim 31.

37. A method of changing the blood rheology of an animal or a human whereby the plasma or serum of the animal or human is exchanged for plasma or serum which has been treated by a method as claimed in claim 32.

38. A method of rapidly regressing coronary atherosclerosis in an animal or a human whereby the plasma or serum of the animal or human is exchanged for plasma or serum which has been treated by a method as claimed in claim 32.

39. A method of removing excessive adipose tissue from an animal or a human whereby the plasma or serum of the animal is exchanged for plasma or serum which has been treated by a method as claimed in claim 32.

40. A method of removing fat soluble toxins from an animal or a human whereby the plasma or serum of the animal or human is exchanged for plasma or serum which has been treated by a method as claimed in claim 32.

41. (Amended) A batch method for removing lipids from a volume of animal or human plasma, serum, or other suitable blood fraction comprising:

providing the volume of animal or human plasma, serum, or other suitable blood fraction;

admixing the plasma, serum, or other suitable blood fraction with an extraction solvent selected from hydrocarbons, ethers, alcohols, esters, amines, or mixtures thereof

which extracts the lipids from the plasma, serum, or other suitable blood fraction to form a delipidated fraction;

introducing an absorbent to the delipidated fraction to substantially remove the solvent from the plasma, serum, or other suitable blood fraction; and

separating the absorbent from the delipidated fraction to form a delipidated fraction.

42. A method as claimed in claim 41, wherein the extraction solvent comprises a mixture of an alcohol and an ether.

43. A method as claimed in claim 42, wherein the extraction solvent comprises a butanol.

44. A method as claimed in claim 41, wherein the extraction solvent comprises butan-1-ol or butan-2-ol.

45. A method as claimed in claim 41, wherein the extraction solvent comprises an ether.

46. A method as claimed in claim 41, wherein the extraction solvent comprises di-isopropyl ether or propyl ether.

47. A method as claimed in claim 41, wherein the extraction solvent comprises 1-butanol and di-isopropyl ether.